8. Rabbits

Program Name: Rabbits.java Input File: rabbits.dat

In the year 1202, the mathematician Fibonacci decided to investigate how rabbits breed under ideal circumstances.

Assuming that a pair of rabbits never dies, and produces a new pair of rabbits every month (except the month they are born), he wanted to answer how many pairs of rabbits there were after N months. These restrictions led him to come up with the recursive formula f(n) = f(n-1) + f(n-2).

Now, imagine he decides to change his model, so that each pair of rabbits doesn't produce a new pair until 2 months after they are born. Figure out the new formula and write a program that gives the number of pairs of rabbits in this model after N months. The answer is guaranteed to fit within a long.

Input
The first line will be a single integer T, the number of test cases.
Each test case consists of a single integer on its own line, N, or the number of months to plug into the formula.
$0 \leq N \leq 115$

Output
For each test case, output a single integer on its own line that is the number of rabbits after N months according to Fibonacci's new model.

Example Input File
```
5
1
2
3
5
14
```
Example Output to Screen
```
1
1
2
4
129
```

Explanation:
Assume at the start, there is one new pair of rabbits.
At 1 month they are not mature enough to conceive, so they remain as the only pair.
At 2 months they reach reproductive age, but have not yet produced children.
At 3 months their first pair of rabbits are born, so now there are two pairs of rabbits.
At 5 months, there are four pairs of rabbits: the original pair, the first pair of offspring, now two months old, the second pair of offspring, age 1 month, and the newly born pair.